

General Information	
Academic subject	Geographic information system e Remote sensing in the forestry field
Degree course	Sciences and technologies of the territory and the agro-forestry environment
Curriculum	
ECTS credits	6
Compulsory attendance	Non
Language	Italian

Subject teacher	Name Surname	Mail address	SSD
	Patrizia Tartarino	patrizia.tartarino@uniba.it	AGR-05

ECTS credits details		ETCs
Basic teaching activities		6

Class schedule	
Period	II semester
Year	
Type of class	Lecture- workshops on the field

Time management	
Hours	210
In-class study hours	60
Out-of-class study hours	150

Academic calendar	
Class begins	1/03/2021
Class ends	18/06/2021

Syllabus	
Prerequisites/requirements	
Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in A4a, A4b, A4c tables of the SUA-CdS)	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Knowledge of the characteristics of GIS systems and remote sensing data and understanding of the results deriving from the processing of the obtained data <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Ability to interpret and apply GIS systems and remote sensing data to land management <i>Making informed judgements and choices</i> <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Autonomous judgment ability in solving various problems regarding aspects related to the construction and management of GIS systems and the interpretation of data deriving from remote sensing. <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> ○ Ability to acquire theoretical and practical notions, to be applied in freelance activities, in those of public and private administration in the sector of competence <p>The results of the expected learning, in term of knowledge and ability, are listed in the Annex A of the Didactic Regulation of the Bachelor Course (expressed by the European descriptors of the study title).</p>
Contents	<p>Frontal teaching and group activities</p> <p>1 - Introduction to GIS and remote sensing in the forestry field</p> <p>1.1 - From cartography to GIS;</p> <p>1.2 - Remote sensing: history and principles.</p>

	<p>2 – Sources of GIS data 2.1 – The Geographic Information Systems; 2.2 – The National Geoportal; 2.3 – Other official sources; 2.4 – Remote sensing data; 2.5 – Field data.</p> <p>3 – Definitions, structure and functionalities of GIS systems 3.2 – Numerical cartography. Vector data and raster data; 3.3 – Spatial representations and projection systems; 3.4 – Processing and analysis of information layers: DTM, DSM and TIN; 3.5 – Processing of thematic information layers; 3.6 – Processing software (ArcGis and QGis).</p> <p>4 – Remote sensing 4.1 – Systems for the acquisition of remotely sensed images: satellites, conventional and remotely piloted aircraft (drones); 4.2 – Active and passive sensors; 4.3 – Characteristics of remote sensing data.</p> <p>5 – Remote sensing image processing techniques 5.1 – Pixel based approach, object oriented and more; 5.2 – Photogrammetric approach.</p> <p>6 – Use of GIS and remote sensing in the forestry field.</p> <p>Exercises Examination of case studies to be agreed with students individually or in groups.</p>
Course program	
Bibliography	<ul style="list-style-type: none"> ○ Cetraro F.; 2015. GIS per la cartografia e l'analisi territoriale. EPC Editore. ○ Dainelli N.; 2011. Telerilevamento. Manuale teorico-pratico per l'elaborazione delle immagini digitali. Dario Flaccomio Editore. ○ Chirici G., Corona P.; Utilizzo di immagini satellitari ad alta risoluzione nel rilevamento delle risorse forestali. Aracne editrice.
Notes	
Teaching methods	The course topics will be discussed with the help of presentations in Power Point
Assessment methods (indicate at least the type written, oral, other)	<p>. The exam consists of an oral test with questions related to the programme developed during lectures and laboratory classes in the hall and in action, as reported in the teaching Regulations of the Degree course in Sciences and technologies of the territory and the agro-forestry environment (article 9) and in the study plan (Annex A). For students who have supported exoneration, the assessment of the profit test is expressed as the average between the vote on the exoneration and the profit test.</p>
Evaluation criteria (Explain for each expected learning outcome what a student has to know, or is able to do, and how many levels of achievement there are.	<ul style="list-style-type: none"> ○ <i>The commission will evaluate to what extent the student will have achieved the "Expected learning outcomes" and will have acquired the "Teaching content" (see the individual items above)</i>
Further information	Visiting hours: on Tuesday from 9.30 am to 12.30 am, or by appointment